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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Guangming Zhang

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EXAMINER

WYLLIE, CHRISTOPHER T

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/562,713	Applicant(s) ZHANG, GUANGMING	
	Examiner CHRISTOPHER T. WYLLIE	Art Unit 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-9 is/are allowed.
- 6) ☒ Claim(s) 1-4, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED OFFICE ACTION

1. This action is responsive to the communication received December 3rd, 2008. Claims 1,5, 9, and 10 have been amended. Claims 1-11 have been entered and are presented for examination.
2. Application 10/562,713 is a 371 of PCT/CN03/01159 (12/31/2003) and claims priority to Foreign Application China 03145506.9 (06/26/2003).
3. Applicant's arguments filed December 3rd, 2008 have been fully considered, but deemed to be non-persuasive.
4. The rejection of claims 1-4 and 10-11 are maintained and reiterated below for the applicant's convenience.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Hardjono (WO 00/33509).

Regarding claim 1, Hardjono discloses creating multicast source information **(page 6, lines 5-11 [the initiator of the multicast stores a data structure containing the authorized members of the multicast and their identities])**; a management platform of the multicast source authentication information dynamically updating said multicast source information in accordance with restriction on multicast source **(page 6,**

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lines 9-10 [the data structure is updated when a new member is added to the multicast group or an old member logs off of the multicast]); controlling the multicast message sent from the multicast source in accordance with said multicast source authentication information **(page 6, lines 12-14 [once the multicast is initiated a message is sent to each authorized member of the multicast group])**.

Regarding claim 2, Hardjono further discloses creating multicast source information in a master multicast source authentication server and slave multicast servers **(page 5, lines 9-11 and page 6, lines 5-8 [each network device 104 (Figure 1) can be a server; each IP address of each authorized member is stored on a member list of each network device 104 of each subnet; this includes the initiator of the multicast and the receivers of the multicast])**; wherein the management platform of the multicast source information comprises a master multicast source server **(page 5, lines 9-11 and page 6, lines 5-8 [the network device 104 connected to the initiator is the master server and it contains a list of all authorized members of the multicast])**.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardjono (WO 00/33509) in view of Novaes (2002/0165977).

Regarding claim 3, Hardjono further discloses that the multicast source authentication information is recorded in tabular form (**page 6, lines 6-8 [the authorized members of the multicast are stored in a member list on each network device 104]**), but does not disclose that the table contains a corresponding relationship between the multicast source address and the multicast address and the multicast address is a result of an AND operation on the multicast source address and the address mask. However, Novaes discloses such features (**paragraph 0077, lines 7-9 [the group ID (multicast address) is the result of an AND operation between the IP address and the subnet mask calculated by an AND operation address mask]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Novaes into the system of Hardjono. The method of Novaes can be implemented by enabling each network device to store the multicast group ID in the table and also to create the multicast group

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ID as a result of the source IP address and the subnet mask. The motivation for this is to enable the network device to manage multiple multicast sessions with information stored in the member lists.

Regarding claim 4, Hardjono further discloses that the slave multicast source authentication server, in accordance with the multicast source authentication information in the master multicast source authentication server, updating the multicast source information stored in a predetermined period ; when the multicast authentication in the master multicast source authentication server is changed, notifying the slave multicast authentication server to update the multicast source information stored **(page 6, lines 12-14, page 7, lines 19-25 [once the multicast is initiated a message is sent to all authorized members of the multicast group; if all the replies are not collected in a given amount of time by the network device 104 of the initiator, a new encryption key is generated and is sent to each member that did reply; therefore the authentication information of the receiving members is updated whenever there is a discrepancy in the amount of replies received by the network node associated with the initiator and the encryption key of the receiving members is updated to the new encryption key])**.

10. Claim 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardjono (WO 00/33509) in view of Song et al (US 2003/0211843) in view of Takahashi (US 6,046,989).

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Regarding claim 10, Hardjono discloses a multicast source control system, comprising: a master multicast source authentication server a group of slave multicast source authentication servers (**page 5, lines 9-11 and page 6, lines 12-15 [once the multicast is initiated by the initiator the network device 104 forwards a message to other network devices 104; therefore the server that receives the multicast message form the initiator can be the call the “master” and the receiving servers can be called the “slaves”]**) and a predefined node (**page 5, lines 9-11 and page 6, lines 12-15 [once the multicast is initiated by the initiator the network device 104 forwards a message to other network devices 104; therefore the first network device 104 acts as a predefined node to other network devices 104]**); wherein, when multicast source authentication information stored therein the master multicast source authentication server is changed, the master multicast source authentication server notifies the slave multicast source authentication servers (**page 6, lines 12-14, page 7, lines 19-25 [one the multicast is initiated a massage is sent to all authorized members of the multicast group; if all the replies are not collected in a given amount of time by the network device104 of the initiator, a new encryption key is generated and is sent to each member that did reply]**); the slave multicast source authentication servers updates multicast source authentication information stored therein at a predefined period in accordance with the multicast source authentication information in the master multicast source authentication server (**page 6, lines 12-14, page 7, lines 19-25 [a new encryption key is generated and is sent to each member that did reply; therefore the information is updated]**); when the slave

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multicast source authentication servers receive an authentication message transmitted from a the predefined node, they transmit a corresponding authentication response to said predefined node in accordance with the authentication information stored therein **(page 6, lines 12-15 and page 7, lines 10-14 and page 8, lines 3-4 [the multicast server receives a message for the initiator and forwards a query message to all member on the list and waits for a response from each member; all members reply to the query message])**; when the predefined node receives a multicast message sent from the multicast source, it initiates an authentication request to the preconfigured multicast source authentication server thereof, and controls the multicast message sent from the multicast source in accordance with the response from the multicast source authentication server **(page 6, lines 12-15 and page 7, lines 10-14 and page 8, lines 3-4 [the multicast server receives a message for the initiator and forwards a query message to all member on the list and waits for a response from each member; if all members reply then the multicast is provides for those members])**. Hardjono does not disclose when the master multicast source authentication server receives an authentication request transmitted from the predefined node, it transmits a corresponding authentication response to said predefined node in accordance with the authentication information stored therein. However, Takahashi discloses such features **(see Figure 8, steps S10, S14, S16 and S38 and column 5 66-67 and column 6, lines 1-4 [the multicast server receives a request for multicast connection registration; the Table 28 is searched to determine if the multicast connection registration exist; if it does it transmits a response])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Takahashi into the system of Hardjono. The method of Takahashi can be implemented by enabling the first network device 104 to receive a request from another network device in order to determine a user's association with the multicast. The motivation for this is to provide a secure multicast to authorized members

Regarding claim 11, Hardjono further discloses that the predefined node is a router or a switch (**page 5, lines 9-11 [each network device can be a router]**).

Allowable Subject Matter

11. Claims 5-9 are allowed.

12. The following is an examiner's statement of reasons for allowance:

Claim 5 recites the limitations: c1. after receiving a multicast message sent from the multicast source, a predefined node initiating an authentication request to the preconfigured multicast source authentication server thereof; c2. said multicast source authentication server performing a longest prefix matching with the multicast address contained in the authentication request based on the multicast address in the multicast source authentication information table stored therein, and sending a response indicating whether the authentication request is successful to said predefined node according to the matching result; c21. if the multicast source address corresponding to the matched multicast address is identical to the multicast source address in said authentication request, sending a response indicating that the authentication request is

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successful to said predefined node ; after receiving the response indicating that the authentication request is successful, said predefined node permitting said multicast message to enter into the multicast network; c22. if the multicast source address corresponding to the matched multicast address is different from the multicast source address in said authentication request, sending a response indicating that the authentication request has failed, to said predefined node; after receiving the response indicating that the authentication request has failed, said predefined node forbidding said multicast message to enter into the multicast network.

Hardjono discloses creating multicast source information **(page 6, lines 5-11 [the initiator of the multicast stores a data structure containing the authorized members of the multicast and their identities])**; a management platform of the multicast source authentication information dynamically updating said multicast source information in accordance with restriction on multicast source **(page 6, lines 9-10 [the data structure is updated when a new member is added to the multicast group or an old member logs off of the multicast])**; controlling the multicast message sent from the multicast source in accordance with said multicast source authentication information **(page 6, lines 12-14 [once the multicast is initiated a message is sent to each authorized member of the multicast group])** and discloses that the multicast source authentication information is recorded in tabular form **(page 6, lines 6-8 [the authorized members of the multicast are stored in a member list on each network device 104])** and that the slave multicast source authentication server, in accordance with the multicast source authentication information in the master multicast source

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authentication server, updating the multicast source information stored in a predetermined period ; when the multicast authentication in the master multicast source authentication server is changed, notifying the slave multicast authentication server to update the multicast source information stored **(page 6, lines 12-14, page 7, lines 19-25 [once the multicast is initiated a message is sent to all authorized members of the multicast group; if all the replies are not collected in a given amount of time by the network device 104 of the initiator, a new encryption key is generated and is sent to each member that did reply; therefore the authentication information of the receiving members is updated whenever there is a discrepancy in the amount of replies received by the network node associated with the initiator and the encryption key of the receiving members is updated to the new encryption key])**).

Novas discloses that the table contains a corresponding relationship between the multicast source address and the multicast address and the multicast address is a result of an AND operation on the multicast source address and the address mask. **(paragraph 0077, lines 7-9 [the group ID (multicast address) is the result of an AND operation between the IP address and the subnet mask calculated by an AND operation address mask])**.

However, none of the prior art discloses or provides motivation to show c1. after receiving a multicast message sent from the multicast source, a predefined node initiating an authentication request to the preconfigured multicast source authentication server thereof; c2. said multicast source authentication server performing a longest prefix matching with the multicast address contained in the authentication request

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based on the multicast address in the multicast source authentication information table stored therein, and sending a response indicating whether the authentication request is successful to said predefined node according to the matching result; c21. if the multicast source address corresponding to the matched multicast address is identical to the multicast source address in said authentication request, sending a response indicating that the authentication request is successful to said predefined node ; after receiving the response indicating that the authentication request is successful, said predefined node permitting said multicast message to enter into the multicast network; c22. if the multicast source address corresponding to the matched multicast address is different from the multicast source address in said authentication request, sending a response indicating that the authentication request has failed, to said predefined node; after receiving the response indicating that the authentication request has failed, said predefined node forbidding said multicast message to enter into the multicast network.

For the reasons described above, claims 5-9 are allowed.

13. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

14. On page 7 of the Remarks, the applicant argues that Hardjono fails to disclose "controlling sending multicast message from the multicast source in accordance with said multicast authentication information." However, the examiner respectfully

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disagrees. Hardjono discloses that the initiator of the multicast stores a data structure containing the authorized members of the multicast and their identities (**page 6, lines 5-11**) and that once the multicast is initiated a message is sent to each authorized member of the multicast group (**page 6, lines 12-14**). Therefore, the messages are only sent to authorized members of the multicast.

15. On page 11 of the Remarks, the applicant argues that neither Hardjono nor Novaes discloses “said multicast source information table contains a corresponding relationship between multicast source address and the multicast address.” Again the examiner respectfully disagrees. Hardjono discloses that all the authorized members of the multicast are recorded in a database (**page 6, lines 5-11**). Novaes discloses that the group ID (multicast address) is the result of an AND operation between the IP address and the subnet mask calculated and that each group has a membership list associated with it (**paragraph 0077, lines 7-9 and paragraph 0078, lines 1-4**).

Therefore, it would have been obvious to one of ordinary skill to include in the data structure of Hardjono a group ID that is associated with a membership list as taught by Novaes. The motivation is to send out a multicast using a group ID instead of separate addresses.

1. On page 12 of the Remarks, the applicant argues that Hardjono fails to disclose “controlling sending multicast message from the multicast source in accordance with said multicast authentication information.” However, the examiner respectfully disagrees. Hardjono discloses that the initiator of the multicast stores a data structure containing the authorized members of the multicast and their identities (**page 6, lines 5-**

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11) and that once the multicast is initiated a message is sent to each authorized member of the multicast group (**page 6, lines 12-14**). Therefore, the messages are only sent to authorized members of the multicast.

2. Also on page 12 of the Remarks, the applicant argues that the server of the Takahashi reference is used for the receivers the multicast and not the multicast source. However, the examiner is unclear as to exactly what the applicant is arguing regarding the Takahashi reference. The limitation of claim 10 states "...when the master multicast source authentication server receives an authentication request transmitted from the predefined node, it transmits a corresponding authentication response to said predefined node in accordance with the authentication information stored therein." However, Takahashi discloses such features (**see Figure 8, steps S10, S14, S16 and S38 and column 5 66-67 and column 6, lines 1-4 [the multicast server receives a request for multicast connection registration; the Table 28 is searched to determine if the multicast connection registration exist; if it does it transmits a response]**).

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER T. WYLLIE whose telephone number is (571) 270-3937. The examiner can normally be reached on Monday through Friday 8:30am to 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher T. Wyllie/
Examiner, Art Unit 2419

/Edan Orgad/
Supervisory Patent Examiner, Art Unit 2419